ABSTRACT CITATION ID: vdae090.062

THE IMPACT OF CONTRAST CLEARANCE ANALYSIS-GUIDED REPEAT SRS ON SURVIVAL IN PATIENTS WITH BRAIN METASTASES

Venkatesh Madhguni, Victor Goulenco, Matthew Recker, Dheerendra Prasad, Robert Plunkett; Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA

PURPOSE: Adverse radiation effects (ARE) including pseudoprogression are known toxicities associated with radiation for intracranial lesions. ARE are often difficult to differentiate from tumor progression. Delay in identification of tumor progression or misidentification of progression as ARE can lead impact patient survival. In this study, we demonstrate the utility of Contrast Clearance Analysis® (CCA) in differentiating ARE from progression and the impact of CCA-guided decision making on patient survival. METHODS: Fifty-seven consecutive patients who had been diagnosed with brain metastasis and treated with Gamma Knife Radiosurgery (GKRS) and had presented with suspicious lesion growth on follow-up MRI scans underwent CCA to distinguish between treatment effect and tumor progression. Lesions considered to have recurrence were retreated with repeat GKRS. Survival analyses were carried out to evaluate the impact of early CCA-guided retreatment on survival. RESULTS: The most common primary disease was non-small cell lung cancer (40%), followed by breast cancer (12%) and melanoma (11%). The use of CCA indicated ARE in 24 lesions and 35 to be pseudoprogression. The total follow-up period was of 72 months. Kaplan-Meier Survival Analyses showed that retreated patients had better survival than the general cohort of patients who did not have CCA-informed retreatments (p<0.05). CONCLUSION: CCA is a promising tool to distinguish between tumor progression and ARE in the setting of radiosurgical treatment. Early differentiation allows early retreatment and improvement of the patient survival.